

APR/FY06

FORT SHAFTER

Hawaii

**Army Defense Environmental
Restoration Program
Installation Action Plan**

Unclassified

Final 30 June 2006

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The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Cleanup Program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern, and proposes a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

In an effort to coordinate planning information between the restoration manager, US Army Environmental Center (USAEC), Fort Shafter, Installation Management Agency-Pacific Area Regional Office (IMA-PARO), executing agencies, and regulatory agencies, an IAP was completed. The IAP is used to track requirements, schedules, and budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is therefore subject to change.

The following persons contributed to the formulation and completion of this Installation Action Plan during a planning workshop held on 24-27 April 2006:

Company/Installation/Branch

US Army Environmental Center

Booz Allen Hamilton for US Army Environmental Center

Engineering & Environment, Inc. for US Army Environmental Center

Engineering & Environment, Inc. for US Army Garrison Hawaii

US Army Garrison Hawaii

ICI for US Army Environmental Center

DIMCO for US Army Engineer Research and Development Center

State of Hawaii Department of Health, HEER Office

Acronyms & Abbreviations

AEDB-R	Army Environmental Database - Restoration
AOC	Area of Concern
BRAC	Base Realignment & Closure Act
CTC	Cost-To-Complete
DA	Department of the Army
DERA	Defense Environmental Restoration Account (currently called ER,A)
DERP	Defense Environmental Restoration Program
DPW	Directorate of Public Works
DSERTS	Defense Site Environmental Restoration Tracking System
EPA	Environmental Protection Agency
ER,A	Environmental Restoration, Army (formerly called DERA)
FS	Feasibility Study
FTSHF	Fort Shafter Flats
FY	Fiscal Year
IA	Installation Assessment
IAP	Installation Action Plan
IAW	In accordance with
IMA-PARO	Installation Management Agency-Pacific Area Regional Office
IRA	Interim Remedial Action
IRP	Installation Restoration Program
KMR	Kahauiki Military Reservation
LTM	Long Term Management
MC	Munitions Constituents
MCL	Maximum Contaminant Level
MEC	Munitions and explosives of concern
MMRP	Military Munitions Response Program
msl	mean sea level
NCO	Non Commissioned Officer
NE	Not Evaluated
NFA	No Further Action
NFRAP	No Further Remedial Action Planned
NPL	National Priority List
OU	Operable Unit
OR&L	Oahu Railway and Land Company
PA	Preliminary Assessment
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethylene
POL	Petroleum, Oil & Lubricants
RA	Remedial Action
RA(C)	Remedial Action – Construction
RA(O)	Remedial Action - Operation
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design

Acronyms & Abbreviations

REM	Removal Action
RI	Remedial Investigation
RIP	Remedy in Place
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
SVOC	Semi-Volatile Organic Compounds
TAL	Target Analyte List
TAPP	Technical Assistance for Public Participation
TBA	Tert-Butyl Alcohol
TCE	Trichloroethylene
TCL	Target Compound List
TRC	Technical Review Committee
TSCA	Toxic Substance Control Act
USAEC	United States Army Environmental Center
USAG-HI	US Army Garrison-Hawaii
USATHAMA	US Army Toxic and Hazardous Materials Agency
USCOE-HED	US Corps of Engineers-Honolulu
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOA	Volatile Organic Analysis
VOC	Volatile Organic Compounds
WAAF	Wheeler Army Airfield

Installation Locale: The Fort Shafter Military Reservation is located 3 miles northwest of downtown Honolulu on the island of Oahu, State of Hawaii. This military reservation covers an area of 1,341 acres that varies in elevation from sea level to 400 feet above msl. It is located in the Kahauiki Valley on the southwestern side of the Koolau Mountain Range. The sub-installation is divided into two areas by the Moanalua highway; the Flats and the Main Post.

Installation Mission: Fort Shafter's mission is to train, equip, and to sustain the Army forces for the Pacific Theater.

Lead Organization:

Installation Management Agency, Pacific Division

Lead Executing Agency: US Army Corps of Engineers, Honolulu (HED)

Regulatory Participation:

Federal: US Environmental Protection Agency, Region IX

State: Hawaii Department of Health

National Priorities List (NPL) Status: Non-NPL

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status: No

RAB/TRC/TAPP has been established at this time.

Installation Program Summaries

IRP

Primary Contaminants of Concern: VOCs, SVOCs, POL, Metals, Pesticides

Affected Media of Concern: Groundwater, Soil, Surface Water

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 2006 with indefinite LTM

Funding to Date (up to FY05): \$ 9,846.2K

Current Year Funding (FY06): \$ 156K

Cost-to-Complete (FY07+): \$ 7,517K

MMRP

Primary Contaminants of Concern: MEC/MC, Lead, Arsenic

Affected Media of Concern: Groundwater, Soil

Estimated Date for RIP/RC: September 2017

Funding to Date (up to FY05): \$ 0K

Current Year Funding (FY06): \$141K

Cost-to-Complete (2007+): \$ 3,657K

Cleanup Program Summary

Installation Historic Activity: Fort Shafter Military Reservation is an active US Army Garrison, Hawaii (USAG-HI) sub-installation. This sub-installation serves as the US Army, Pacific Command Headquarters and also is home of the sub-installation's executing agency, US Army Corps of Engineers, Pacific Ocean Division. Fort Shafter was established in 1907 and is the oldest Army sub-installation in Hawaii

The land uses of the area surrounding this sub-installation are residential, park, school, business/commercial, light industrial and forest reserve.

The Fort Shafter Military Reservation is situated entirely within the Ahupua'a of Kahauiki, a former native designated Hawaiian land unit of approximately 1,438 acres, extending from sea level to the 1,440 feet elevation. Approximately 474 acres is currently under the jurisdiction of the Army and the balance is owned or controlled by the State of Hawaii.

The earliest recorded uses of Kahauiki were reported to indicate the presence of irrigated agricultural terraces fed by Kahauiki Stream extending inland from the sea for about one-half mile.

An earthen banked fishpond named Weli was a resource of Kahauiki and appeared to have received a portion of freshwater from Kahauiki Stream (McCallister, 1933:91). This man-made prehistoric structure was filled with dredge soil from construction of the Keehi seaplane harbor during the 1940s and is now located under the area seaward of Loop Road at Shafter Flats known as the Motor Park (Thompson, 1983:99).

The series of native Hawaiian land reforms adopted by Kamehameha III during the mid-1800s saw no Kuleana registrations or awards for cultivated lands in Kahauiki, which became Crown Lands. Most of this land was subsequently leased to the Dowsett Estate who then subleased it to Star Dairy Company. It is reported that the dairy higher elevation lands were used for grazing of cattle and the lower elevation land for the raising of feed.

Following Annexation in 1898 the Kahauiki Crown Lands were designated the Kahauiki Military Reservation (KMR). All tenant leases were negotiated and completed in 1902 and in 1905 military construction began. A portion of KMR was set aside and re-named Fort Shafter in 1907 and during the period 1907-1909 two areas were constructed consisting of the initial Battalion cantonment at Palm Circle and Post Hospital (or old Tripler General Hospital) where the present NCO Family Housing area is serviced by Funston Loop. The Palm Circle Historic District, which incorporates a majority of the original 1907 cantonment structures, was listed on the National Register of Historic Places in 1984 and a National Historic Landmark in 1987.

Cleanup Program Summary

In 1913, Fort Shafter was authorized to expand the original Palm Circle cantonment area and construction was completed in December of 1914. Construction consisted of a complete Regimental Post consisting of troop barracks, officer and NCO quarters, gun parks and support facilities along the length of Wisser Road from the Shafter Bowling Alley to Shafter Patch Gate (Meeken, 1974:16).

Between 1956 and 1961, most of the 1914 Regimental Post barracks, offices, officer and NCO quarters, motor pool areas and warehouse facilities were demolished and removed. After 1969, Parks Road was re-aligned and re-routed south of the Fourth Street intersection and extended to intersect with Chamberlain Road.

The Hawaiian Ordnance Depot was designated and formed in 1917 in the area that included the high ground adjacent and north of the present Middle Street and east (Mauka) of King Street which overlooked Kahauiki Stream and its wetlands to the west. The OR&L rail line consisted of a route to the Depot and along the coastal area. The Depot served as a separate post within Fort Shafter with its own gate house, Post Headquarters (lost during H-1 Freeway construction), quarters along Montgomery Drive (the depot commander's quarters is currently T-305), fire station, officer's club (T-313), a series of warehouses served by railroad sidings (T-341 to T-347, T-434, T-435, T-438, T-441, and T-443), and barracks (now T-320, Army Education Center), which became known as the Hawaii Arsenal Military Reservation at the end of 1918.

Prior to 1949 much of the area seaward of King Street was cleared off and used as a storage area for the Signal Corps. By 1962, the Ordnance Corps was eliminated through the reorganization of the Army and the use of many of the standing structures were assigned to other commands. This area consists of the present-day 300-400 area, the Craft Shops and Child Care Center, the 29th Engineer Battalion Motor Pool and Base Plant, and the Shafter Flats area.

The Signal Corps area at Shafter Flats was initially occupied in October 1940 and consisted largely of warehouses, a Bachelor Officers Quarters, office buildings, and a photo lab. This area lies on a former tidal marsh area behind the old Weli fishpond which was covered with over one and a half million cubic yards of dredge fill to an average elevation of 12 feet above sea level.

References:

McCallister, J. Gilbert, 1933, Archeology of Oahu. B.P. Bishop Museum Bulletin 104, Honolulu.

Meeken, Stanley R., 1974, "A History of Fort Shafter, 1894-1974." Machine reproduced copy at Fort Shafter Library.

Thompson, Erwin N., 1983, History of the U.S. Army Corps of Engineers in the Pacific 1905-1980.

Cleanup Program Summary

Watanabe, Farley K., Archeologist, U.S. Army Corps of Engineers, Pacific Ocean Division, June 1993, Verbal Conversation

Current Activity: Current IRP program activity includes final negotiations on obtaining closure for the Remedial Investigation and Risk Assessment for Sites FTSHF-46,47,48,49,50,51, and 52. These sites include the Former Fueling Station (Bldg 1593), the Former Laundry (Building 305) the Former Repair Shop (Bldg 1553 and 1567), Former Warehouse 45, Former Vehicle Wash Rack, Bldg T-1539, Current Warehouse (Former Building 1542), and the Former Spray Paint Booth (Building T-1537). The RI and RA report recommended no further action and we are working to obtain acceptance of this assessment by the Hawaii State Department of Health. We are currently in negotiations with them.

The Fort Shafter MMRP sites, including FTSHF-001-R-01, FTSHF-002-R-01, and FTSHF-003-R-01, which includes a pistol range and two rifle ranges are scheduled for Remedial Investigation phase I work during FY06 (summer, 2006).

Program Progress: **IRP**

The planned IRP program includes finalizing the RI/RA and awaiting comments from the Department of Health, State of Hawaii regarding these reports. Long term monitoring is expected.

MMRP

Planned MMRP activities include initiating a Site Investigation of the three (3) Ft. Shafter MMRP sites in 2006. A records search has been completed and reported in an October, 2002 Inventory Report by Techlaw, Inc, which identified and provided a short summary of the 3 sites listed in this documentation.

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Installation Restoration Program

Total AEDB-R IRP Sites/AEDB-R Sites with Response Complete: 46/45

Different Site Types:

7 Contaminated Buildings	5 Contaminated Groundwater
1 Contaminated Sediments	1 Landfill
1 Pesticide Shop	1 Surface Runoff
1 Washrack	4 Storage Areas
1 Plating Shop	11 Spill Site Areas
4 Underground Tank Farms	5 USTs
2 Waste Lines	2 Soil Contamination after Tank Removal

Most Widespread Contaminants of Concern: POL, Pesticides, Solvents

Media of Concern: Groundwater, Soil

Completed Removal (REM)/Interim Remedial Action (IRA)/Remedial Action (RA):

REM - Underground Storage Tank Removal (FY92) Cost \$379.0K
REM - Underground Storage Tanks Removal (FY93-94) Cost \$300.7K
REM - Underground Storage Tank Removal (FY93-94) Cost: \$135.0K

Total IRP Funding

Prior Years (up to FY05):	\$ 9,846,200
Current Year Funding (FY06):	\$ 156,000
Future Requirements (FY07+):	\$ 7,517,000
Total:	\$ 17,519,200

Duration of IRP

Year of IRP Inception: 1991
Year of IRP RIP/RC: 200712
Year of IRP Completion including Long-Term Management (LTM): 203812

IRP Contamination Assessment

Installation Assessment Overview: Investigations at Fort Shafter were initially conducted in 1983 through 1984 as part of the Army's sub-installation assessment program. No significant sources of contamination were identified and no further action was recommended.

In August 1990, the US Army Toxic and Hazardous Materials Agency conducted an assessment to establish baseline data for potential waste. Waste sites were broadly defined as locations from which hazardous constituents might be released into the environment, regardless of whether the material is a solid or a hazardous waste. The report identified 29 potential hazardous waste sites at Fort Shafter. Although the report did not differentiate between sites that are eligible for the Defense Environmental Restoration Account (DERA) funds under the Sub-installation Restoration Program, it did form the basis of sites listed in the Defense Environmental Restoration Tracking System (DSERTS) data base.

In 1992, the US Army Corps of Engineers, Pacific Ocean Division conducted a Preliminary Assessment/Site Investigation (PA/SI) at 13 selected sites that were eligible for DERA funds. The primary contaminants of concern were POL, heavy metals, and pesticides. The PA recommended 7 sites for further investigation (AEDB-R sites FTSHF-01, -02, -14, -16, -23, -24, and -25) and 6 sites for No Further Response Action Planned, Response Complete (NFRAP RC)(AEDB-R sites FTSHF-04, -07, -09, -13, -18, and -22). The SI recommended 2 sites for further investigation/removal (AEDB-R sites. Field work for FTSHF-01 and -23 remedial actions have been completed and reports are being drafted.

In June 1994, the US Army Environmental Hygiene Agency conducted a Preliminary Assessment (PA) on the remaining 16 sites identified in the USATHAMA Property Report. The purpose of the PA was "to determine the potential threat to human health and the environment, and to identify any waste sites needing a Sites Investigation." The PA recommended 3 sites for further action (AEDB-R sites FTSHF-17, -20, -27) and 13 sites for NFRAP RC (AEDB-R sites FTSHF-06, -08, -10, -11, -12, -15, -19, -21, -26, -28, -29, -30, and -43). For sites that require further action to be eligible for DERA funds, evidence of contamination must have resulted from past activities. However, in most cases this assessment was difficult. After review of the PA recommendations, sites FTSHF-21, and -28 were added to the list of sites requiring further investigation. Additional investigation conducted by Dames & Moore through POD in 1995 recommended NFRAP for sites FTSHF-17, -21 and -28. At FTSHF-27, a site inspection was conducted in 1997 and concluded no risk to human health or the environment was present.

The original database of potential hazardous waste sites (29 sites) was expanded in FY94 to 43 AEDB-R sites. The increase was primarily due to the inclusion of abandoned underground tanks (AEDB-R sites FTSHF-33, through -43). Removal actions were completed in FY94.

IRP Contamination Assessment

In a 1996 preliminary Assessment/Site Investigation (PA/SI), an additional seven sites were identified as requiring further investigation. The seven sites are referred to in the current Remedial Investigation/Risk Assessment (RI/RA) report that is being reviewed by the State of Hawaii Department of Health.

Remediation of the former pesticide storage building 225 (FTSHF-01) and plating shop, building 1507 (FTSHF-23) was completed in March 1998. At the pesticide storage building 225 approximately 290 tons of pesticide (chlordane) contaminated soil was excavated from the site. A subsequent risk assessment determined that there were no unacceptable risks present at the site. A sump and surrounding soil were removed at the former plating shop, building 1507 (FTSHF-23). No further remedial actions are planned for the site.

Cleanup Exit Strategy:

There is only one (1) remaining site on Ft. Shafter that requires additional consideration under the IRP program. Long Term Management for Fort Shafter Flats will be covered under FTSHF-46. Cleanup and exit strategy will include working with the Department of Health, State of Hawaii, regarding closure of the following 7 sites: (FTSHF-46,-47,-48,-49, -50, -51, and -52. As part of the RI/FS, a Risk Management Study has been contracted and will likely result in Land Use Controls being implemented. Upon approval of the RI/FS by DOH, a Record of Decision will be drafted.

1984

- Installation Assessment of U.S. Army Support Command, Hawaii, Installations - Volume I: Fort Shafter and Subinstallations: Tripler Army Medical Center, Fort Kamehameha, and Kapalama Military Reservation, Oahu, Hawaii. Report 338. Prepared by Environmental Science and Engineering, Inc., 1984.
- Installation Assessment of U.S. Army Support Command, Hawaii. Prepared for the U.S. Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, Maryland, by Roy F. Weston, Inc., 1984.

1990

- Property Report. Prepared for the U.S. Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, Maryland by Roy F. Weston, Inc., 1990.
- Regional Hawaii Army Solvent Recycling Study. Prepared for U.S. Army Support Command, Hawaii, and U.S. Army Western Command by Woodward-Clyde Consultants, July 1990.

1991

- Survey of Polychlorinated Biphenyls (PCBs), Fort Shafter Flats, Oahu, Hawaii. Prepared for the U.S. Army Corps of Engineers, Pacific Ocean Division, Fort Shafter, Hawaii by Woodward-Clyde Consultants, January 1991.

1992

- Preliminary Assessment, Various Sites, Fort Shafter, Oahu, Hawaii, Prepared by US Army Corps of Engineers, Pacific Ocean Division, Design Division/Military Division, July 1992.
- Preliminary Assessment for Six Selected Sites, Fort Shafter, Hawaii, Pacific Ocean Division, Honolulu, Hawaii. Prepared by U.S. Army Corps of Engineers, November 1992.

1993

- Site Inspection at the Underground Storage Tank Site, U.S. Army Reserve Center, Fort Shafter Flats, Hawaii. Prepared for the U.S. Army Corps of Engineers, Pacific Ocean Division, Honolulu, Hawaii by PRC Environmental Management Inc., August 1993.

1994

- Site Investigation at Various Sites, Fort Shafter, Oahu, Hawaii, Pacific Ocean Division, Honolulu, Hawaii. Prepared by U.S. Army Corps of Engineers, January 1994.
- Site Assessment No. 38-26-K28U-94, Waste Sites at Army properties, Hawaii. Prepared for USARPAC and USAG-HI by U.S. Army Environmental Hygiene Agency, June 14, 1994.

1995

- Interim Preliminary Assessment Report, Various Sites, Fort Shafter, Hawaii. Prepared by Dames and Moore, June 1995.

1996

- Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii. Prepared by Harding Lawson Associates, February 1996.

1997

- Site Inspection Report, Fort Shafter Solid Waste Dump, Oahu, Hawaii. Prepared by Dames and Moore, March 1997.

1998

- Site Characterization and Remediation at the Pesticide Storage Building 225 and Plating Shop Building 1507, Fort Shafter, Hawaii. Prepared by PRC Environmental Management, Inc., March 1998.

2002-2006

- Draft Remedial Investigation and Risk Assessment for Various Sites, Ft. Shafter, Oahu, Hawaii, conducted by Environet, Inc. Field work began in 2002 and review and finalization of the report in 2006. Sites included in this study included: FTSHF-46, -47, -48, -49, -50, -51, -52, and -53, as outlined in other sections of this write-up.

FORT SHAFTER

Installation Restoration Program Site Descriptions

FTSHF-46

FORMER FUELING STATION (BLDG 1537)

SITE DESCRIPTION

The site was a former fueling station and paint spray booth (Building T-1537) located in Area 4 (HLA, 1996) in the southwest corner of Fort Shafter Flats. A review of historical aerial photographs and topographic maps indicates that the gasoline and oil storage tanks were present at the site in 1952 and the structure was built prior to 1969. The buildings and structures, including the tanks, have been demolished and removed, and the area is currently an open field with short grasses and shrubs. SI sampling results show low level TCE groundwater contamination below MCLs. Contaminants above PRGs include in the soil: arsenic, chromium, dieldrin, and PCBs. Potential human and ecological receptor is Keehi Lagoon.

This site is also known as Site G in the Remedial Investigation (RI) Risk Assessment Report. The risk assessment for the site itself will likely allow for closure; however, this site (FTSHF-46) includes additional work that may be necessary to evaluate background sediment conditions. Elevated hazard indices in the ecological risk assessment may suggest that further evaluation of on-site concentrations and consideration of sources of contamination to differentiate between site-specific and regional anthropogenic contamination.

The February 2005 Remedial Investigation and Risk Assessment Report by Environet, Inc was submitted in Draft form to the State of Hawaii Department of Health. It is pending a final version that incorporates the comments given by the State of Hawaii Department of Health. The present plan is to obtain RC by September, 2006.

CLEANUP STRATEGY

There is only one (1) remaining site on Ft. Shafter that requires additional consideration under the IRP program. Long Term Management for Fort Shafter Flats will be covered under FTSHF-46. Cleanup and exit strategy will include working with the Department of Health, State of Hawaii, regarding closure of the following 7 sites: (FTSHF-46,-47,-48,-49, -50, -51, and -52. As part of the RI/FS, a Risk Management Study has been contracted and will likely result in Land Use Controls being implemented. Upon approval of the RI/FS by DOH, a Record of Decision will be drafted.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs, SVOCs, Metals, Pesticides, PCBs

MEDIA OF CONCERN:
Groundwater

PHASES	Start	End
PA.....	199309	199605
SI.....	199309	199605
RI/FS	200206	200609
LTM	200610	206409

RC: 200609

IRP No Further Action Sites Summary

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
FTSHF-01	Bldg 225, 434 Former Pesticide Storage	Final Remediation Completion Report, Site Characterization and Remediation at the Pesticide Storage Building 225 and Plating Shop Building 1507, Fort Shafter, Hawaii, PRC Environmental, 1998	199805
FTSHF-02	Bldg 725, Pesticide Storage	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199401
FTSHF-03	Shafter Flats Vehicle Maint. Bldgs. 1515/1519	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996	199602
FTSHF-04	Vehicle Maint. Bldg. 345	Preliminary Assessment for Six Selected Sites, Fort Shafter, USACE, 1992	199211
FTSHF-06	Autocraft Shop	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996	199602
FTSHF-07	Vehicle Wash Are	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996	199602
FTSHF-09	Vehicle Wash Area near T1521 and T1522	Site Inspection at the Underground Storage Tank Site, Fort Shafter Flats, PRC Environmental, 1993	199307
FTSHF-10	Veterinary Clinic	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996	199602
FTSHF-11	Photo Lab (Bldg 1500)	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996	199602
FTSHF-12	Arts and Crafts Center	Study complete. No cleanup required.	199008
FTSHF-13	Maintenance Area in the 400 Block	Preliminary Assessment for Six Selected Sites, Fort Shafter, USACE, 1992	199211

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
FTSHF-14	Vehicle Wash Area Near Bldg 405	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199401
FTSHF-15	USTs at USASCH Maintenance Area	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996	199610
FTSHF-16	Vehicle Wash Area near Bldg 420	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199401
FTSHF-17	USASCH Maintenance Area at Bldg 420	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996	199605
FTSHF-18	Flammable Materials Storage (Bldg 346,347)	Preliminary Assessment for Six Selected Sites, Fort Shafter, USACE, 1992	199207
FTSHF-19	Dental Clinic	Study complete. No cleanup required.	199008
FTSHF-20	USTs at Bldg 535 (Service Station)	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199410
FTSHF-21	Transformer Storage Area	Study complete. No cleanup required.	199008
FTSHF-22	Former Herbicide Storage Bldg 310	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199401
FTSHF-23	Paint/Plating Bldg 1507 – Wing A	Final Remediation Completion Report, Site Characterization and Remediation at the Pesticide Storage Building 225 and Plating Shop Building 1507, Fort Shafter, Hawaii, PRC Environmental, 1998	199805
FTSHF-24	Photography Labs (Bldgs 435, 1290, 1292)	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199401
FTSHF-25	Stormwater Runoff Area	Preliminary Assessment for Six Selected Sites, Fort Shafter, USACE, 1992	199207
FTSHF-26	Lift Station at Bldg 1605	Study complete. No cleanup required.	199008
FTSHF-27	Dump Site	All required cleanup(s) completed	199704
FTSHF-28	Water Treatment Lab	Study complete. No cleanup required.	199008

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
FTSHF-29	Water Treatment Plant at 511	Study complete. No cleanup required.	199008
FTSHF-30	Indoor Firing Range	Study complete. No cleanup required.	199008
FTSHF-33	USARC Bldg A Ft Shafter Flats UST Site	All required cleanup(s) completed	199105
FTSHF-34	USTs Bldg 310	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199410
FTSHF-35	USTs Bldg 320	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199410
FTSHF-36	USTs Bldg 430	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199410
FTSHF-37	USTs Bldg 508	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199410
FTSHF-38	USTs Bldg 507	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199410
FTSHF-39	USTs Bldg 520	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199410
FTSHF-41	USTs Bldg 1500	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199410
FTSHF-42	UST at Bldg 1528	All required cleanup(s) completed	200003
FTSHF-43	USTs Bldg 1525	Site Investigation, Various Sites, Fort Shafter, Hawaii, USACE Design Division, 1994	199410
FTSHF-45	LUST Soil Remediation – Bldg 1605	Preliminary Assessment/Site Inspection, Fort Shafter Flats, Fort Shafter, Hawaii, Harding Lawson Associates, 1996	199612
FTSHF-47	Former Fueling Station, Bldg 1593	Study complete. No cleanup required.	200609
FTSHF-48	Former Laundry Facility, Flats	Study complete. No cleanup required.	200609
FTSHF-49	Former Warehouse 45	Study complete. No cleanup required.	200609
FTSHF-50	Former Repair Shop, Bldg 1553	Study complete. No cleanup required.	200609
FTSHF-51	Washrack T-1539	Study complete. No cleanup required.	200609

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
FTSHF-52	Former Warehouse T1542	Study complete. No cleanup required.	200609

Initiation of IRP: 1991

Past Phase Completion Milestones

1992

REM (FTSHF-33 thru 39, 41, 42, 43) Initiated	Jan 92
PA/SI (13 sites by POD) Initiated	Jun 92
PA/SI (FTSHF-03, 06 - 08, 10, 11, 46 - 49, 50) Initiated	Aug 92
RA (FTSHF-15, 32 & 45) Initiated	Oct 92

1993

REM (FTSHF-31) Initiated	Oct 93
PA (16 sites by AEHA) Initiated	Nov 93

1994

PA (16 sites by AEHA) Completed	Jun 94
REM (FTSHF-01 & 23) Initiated	Oct 94
PA/SI (FTSHF-17, 21, 27, & 28) Initiated	Oct 94
REM (FTSHF-31) Completed	Dec 94
REM (FTSHF-33 thru 39, 41, 42, 43) Completed	Dec 94

1995

PA/SI (FTSHF-17, 21 & 28) Completed	Dec 95
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1996

PA/SI (FTSHF-03, 06-08, 10, 11, 46 -49, 50) Complete	Jun 96
RA (FTSHF-15, 32 & 45) Completed	Jun 96

1997

SI (FTSHF-27) Completed	Apr 97
RA (FTSHF-42) Initiated	Sep 97

1998

REM (FTSHF-01 & 23) Completed	Mar 98
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2000

RA (FTSHF-42) Complete	Mar 00
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Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates:
200709

Schedule for Next Five Year Review: 201209

Estimated Completion Date of IRP (including LTM phase): 203812

FORT SHAFTER IRP SCHEDULE
(Based on current funding)

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
FTSHF-46	RI/FS									206409

Prior Years Funds

Total Funding up to FY04: \$9,773K

FY05

Site Information	Expenditures	FY Total
FTSH-046, RD	5	
FTSH-046, RI	8.2	
FTSH-046, RA(C)	30	43.2K
FTSH-047, RI	5	
FTSH-048, RI	5	
FTSH-049, RI	5	
FTSH-050, RI	5	
FTSH-051, RI	5	
FTSH-052, RI	5	30K

Total Prior Year Funds: \$73K

Current Year (FY06) Requirements

Site Information	Requirements	FY Total
FTSH-046, RI	134	
RI	22	\$156K

Total Future Requirements: \$7,517K

Total IR Program Cost (from inception to completion of the IRP): \$16,577K

FORT SHAFTER

Military Munitions Response Program

Total AEDB-R MMRP Sites / AEDB-R Sites with Response Complete: 3/0

AEDB-R Site Types

2 Small Arms Ranges 1 Pistol Range

Most Widespread Contaminants of Concern: Metals

MEDIA OF CONCERN: Soil

Total MMRP Funding

Prior Years (up to FY05):	\$	0
Current Year (FY06):	\$	141,000
Future Requirements (FY07+):	\$	3,657,000
Total:	\$	3,798,000

Duration of MMRP

Year of MMRP Inception: 200204

Year of MMRP RIP/RC: 201709

Year of MMRP Completion Including LTM: 201709

MMRP Contamination Assessment

MMRP Contamination Assessment Overview

There are three (3) Small Arms Ranges identified during the MMRP range inventory.

MMRP Cleanup Exit Strategy

The SI is scheduled for FY06 to further determine the cleanup strategy for the identified sites.

2002

- Final CTT Inventory Report, TechLaw, October

FORT SHAFTER

Military Munitions Response Program Site Descriptions

FTSHF-001-R-01 PISTOL RANGE

SITE DESCRIPTION

This closed pistol range is located in the northeast portion of Fort Shafter and comprises approximately 0.43 acres. It was identified on three 1956 maps; however, no other information was found regarding this range. Based on the name, it was assumed that expended small arms were used on this range. Since no other maps were found depicting the construction of the range, it was assumed that the range was used during the Korean War and a construction date of 1950 was used. By 1961, military housing developments were established at this site. There have been no known response actions at this range.

The SI for this site is underway.

CLEANUP STRATEGY

Since military housing was constructed at the site it is likely that little contamination resulting from the range remains. Groundwater is also 400 feet or so below land surface, so groundwater contamination is not anticipated to be a problem.

STATUS

REGULATORY DRIVER: CERCLA

RAC SCORE: Negligible risk

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Soil

PHASES	Start	End
PA.....	200204	200305
SI	200510	200609
RI	201210	201309
RD	201510	201609
RA(C).....	201610	201709

RC:201709

FTSHF-002-R-01

RIFLE RANGE 1

SITE DESCRIPTION

This closed rifle range is located in the northeast portion of Fort Shafter and consists of approximately 2 acres. This rifle range was identified on three 1956 maps; however, no other information was found regarding this range. Based on the name, it was assumed that expended small arms were used. Since no other maps were found depicting the construction of the range, it was assumed that the range was used during the Korean War and a construction date of 1950 was used. By 1961, military housing developments were established at this site. There have been no known response actions at this range.

The SI for this site is underway.

CLEANUP STRATEGY

Since military housing was constructed at the site it is likely that little contamination resulting from the range remains. Groundwater is also 400 feet or so below land surface, so groundwater contamination is not anticipated to be a problem.

STATUS

REGULATORY DRIVER: CERCLA

RAC SCORE: Negligible risk

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Soil

PHASES	Start	End
PA.....	200204	200305
SI	200510	200609
RI.....	201210	201309
RD	201510	201609
RA(C).....	201610	201709

RC:201709

FTSHF-003-R-01 RIFLE RANGE 2

SITE DESCRIPTION

This closed rifle range is located in the northwest portion of Fort Shafter and consists of approximately 2 acres. This rifle range appeared on a September 1937 map; however, no other information was found regarding this range. Based on the name, it was assumed that small arms were used. It was also assumed, based on the date of the map, that this range was used during WW II. Presently, this area lies within the installation's golf course. There have been no known response actions at this range.

The SI for this site is underway.

CLEANUP STRATEGY

Since a golf course is constructed at the site it is likely that little contamination resulting from the range remains. Groundwater is also 400 feet or so below land surface, so groundwater contamination is not anticipated to be a problem.

STATUS

REGULATORY DRIVER: CERCLA

RAC SCORE: Negligible risk

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Soil

PHASES	Start	End
PA.....	200204	200305
SI	200604	200609
RI	201210	201309
RD	201510	201609
RA(C).....	201610	201709

RC:201709

Initiation of MMRP: 200204

Past Phase Completion Milestones

PA – 200305

Projected ROD/DD Approval Dates: None

Projected Construction Completion: 201709

Schedule for Five Year Reviews: Unknown

Estimated Completion Date of MMRP including LTM: 2017

FORT SHAFTER MMRP SCHEDULE
(Based on current funding)

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
FTSHF-001-R-01	SI									
	RI/FS									
	RD									201609
	RA(C)									201709
FTSHF-002-R-01	SI									
	RI/FS									
	RD									201609
	RA(C)									201709
FTSHF-003-R-01	SI									
	RI/FS									
	RD									201609
	RA(C)									201709

Prior Years Funds

Total Funding up to FY04: \$0K

FY05

Site Information	Expenditures	FY Total
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Total Prior Year Funds: \$0K

Current (FY06) Year Requirements

Site Information	Expenditures	FY Total
SI		141,000

Total Future Requirements: \$3,657K

Total MMR Program Cost (from inception to completion of the IRP): \$3,798K

The area surrounding Fort Shafter is made up of numerous and varying groups. There are primarily urban neighborhoods in the near vicinity but much of the land around the sub-installation is used for agriculture. Wheeler Army Airfield (WAAF) is also between the two portions of Fort Shafter. The Air Force was the custodian of the property prior to the Army assuming control in 1991. The Air Force remains the proponent for restoration activities at WAAF. As such, a diverse group of members made up the TRC. Twenty representatives from landowners, businesses, neighborhood boards, and elected officials were invited to each meeting. The chairpersons of both the Wahiawa and Mililani neighborhood boards were members as well as the elected officials of the two towns. The University of Hawaii at Manoa, Water Resources Research Center also took part in the TRC.

Efforts taken to determine interest

The installation has held numerous community-based activities in attempts to gain public input into the investigative process. The installation realized that public input and acceptance would be valuable in ascertaining a practical and effective remedy to the contamination problem. A fact sheet was distributed to the mailing list in the Community Relations Plan at the inception of the program at Fort Shafter. This fact sheet was updated periodically to provide current information and status of the investigation. This was done three times subsequent to the initial publication. At the end of the fact sheet there was a mail in sheet if the reader wanted more information on the investigation.

Proposed Plans for each of the operable units were also distributed to the mailing list with the same "request for more information" sheet affixed to the end of the brochure.

Public availability sessions were held in September 1994 in both Schofield and Wahiawa. Booth was set up to publicize RABs.

Results

There were no responses to the direct mailing of fact sheets. There were two written requests for more information in response to direct mailings of proposed plans. There were two phone calls in response to the proposed plans. No responses were received as a result of the public availability sessions.

Conclusions

Based upon the results of community meetings and mailouts, plus the low attendance at TRC meetings and public meetings, both the public availability sessions and the meetings held in connection with presenting the proposed plans, the installation has determined that insufficient public interest exists to sustain a RAB. Solicitation will occur in 2007.